ABSTRACT

The present invention provides a protonically conductive membrane for use in a direct methanol fuel cell wherein a portion of said protonically conductive membrane conducts protons from the anode face of the membrane to the cathode face of the protonically conductive membrane, and a portion of which evolves gas from the anode side of the membrane to the cathode side of the protonically conductive membrane where it is vented to the environment. The present invention also includes a membrane electrode assembly, fuel cell and fuel cell system which are comprised of the protonically conductive membrane and which evolve gas from the anode side of the protonically conductive membrane to the cathode side of the protonically conductive membrane, where it is vented to the ambient environment.